



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/063,887 | 05/21/2002 | Chien-Chih Fu | AMIP0015USA | 2364 |

27765 7590 06/20/2003

NAIPO (NORTH AMERICA INTERNATIONAL PATENT OFFICE)
P.O. BOX 506
MERRIFIELD, VA 22116

EXAMINER

PRENTY, MARK V

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 2822 | 3 |

DATE MAILED: 06/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
10/063,887

Applicant(s)

FU

Examiner

Prenty

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on May 21, 2002.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-21 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-4, 6-11, and 14-19 is/are rejected.

7) Claim(s) 5, 12, 13, 20, and 21 is/are objected to.

8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some* c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)

4) Interview Summary (PTO-413) Paper No(s). _____

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

5) Notice of Informal Patent Application (PTO-152)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

6) Other: _____

This Office Action is in response to the papers filed May 21, 2002.

Claims 1-4, 6, 7, 9-11 and 14-19 are rejected under 35 U.S.C. §102(e) as being anticipated by Ishimura et al. (United States Patent 6,329,700, hereafter Ishimura).

With respect to independent claim 1, Ishimura discloses scribe lines for increasing a utilizable area on a wafer, the wafer comprising a plurality of dies, the scribe lines comprising (see the entire patent, including Fig. 2, for example): at least a first scribe line DXb arranged in a first direction in a first gap of the dies CR1, the first scribe line DXb having a first width Lb; and at least a second scribe line DXa arranged in the first direction in a second gap of the dies, the second scribe line DXa having a second width La narrower than the first width.

Claim 1 is thus rejected under 35 U.S.C. §102(e) as being anticipated by Ishimura.

With respect to dependent claim 2, Ishimura's first scribe line DXb comprises at least an alignment mark SM1 for aligning elements on different dies.

Claim 2 is thus rejected under 35 U.S.C. §102(e) as being anticipated by Ishimura.

With respect to dependent claim 3, Ishimura's first scribe line DXb comprises at least a test key TP for performing a quality test on the dies.

Claim 3 is thus rejected under 35 U.S.C. §102(e) as being anticipated by Ishimura.

With respect to dependent claim 4, Ishimura's first width Lb is approximately between 100 and 500 micrometers (see column 5, lines 10-13, for example).

Claim 4 is thus rejected under 35 U.S.C. §102(e) as being anticipated by Ishimura.

With respect to dependent claim 6, Ishimura's second scribe line DXa is provided for dicing the wafer (see the Abstract, for example).

Claim 6 is thus rejected under 35 U.S.C. §102(e) as being anticipated by Ishimura.

With respect to dependent claim 7, Ishimura's wafer is scribed by supplying a mechanical stress on the scribe lines (see column 4, lines 61-64, for example).

Claim 7 is thus rejected under 35 U.S.C. §102(e) as being anticipated by Ishimura.

With respect to dependent claim 9, Ishimura's wafer further comprises a plurality of scribe lines DYa and DYb arranged in a second direction, the scribe lines arranged in the second direction and comprising various scribe line widths La and Lb.

Claim 9 is thus rejected under 35 U.S.C. §102(e) as being anticipated by Ishimura.

With respect to dependent claim 10, Ishimura's second direction is perpendicular to the first direction.

Claim 10 is thus rejected under 35 U.S.C. §102(e) as being anticipated by Ishimura.

With respect to dependent claim 11, Ishimura's dies CR1 are in the same shapes and sizes.

Claim 11 is thus rejected under 35 U.S.C. §102(e) as being anticipated by Ishimura.

With respect to independent claim 14, Ishimura discloses scribe lines on a wafer, the wafer comprising a plurality of dies, the scribe lines comprising (see the entire patent, including Fig. 2, for example): a plurality of first scribe lines DXb

positioned in gaps of the dies, each of the first scribe lines comprising a predetermined pattern; and a plurality of second scribe lines DXa positioned in gaps of the dies, the second scribe lines being narrower than the first scribe lines.

Claim 14 is thus rejected under 35 U.S.C. §102(e) as being anticipated by Ishimura.

With respect to dependent claim 15, Ishimura's predetermined pattern DXb comprises an alignment mark SM1 for aligning elements on different dies.

Claim 15 is thus rejected under 35 U.S.C. §102(e) as being anticipated by Ishimura.

With respect to dependent claim 16, Ishimura's predetermined pattern DXb comprises a test key TP for performing a quality test on the dies.

Claim 16 is thus rejected under 35 U.S.C. §102(e) as being anticipated by Ishimura.

With respect to dependent claim 17, Ishimura's first scribe lines DXb comprise at least an arranging direction.

Claim 17 is thus rejected under 35 U.S.C. §102(e) as being anticipated by Ishimura.

With respect to dependent claim 18, Ishimura's second scribe lines DXa comprise at least an arranging direction.

Claim 18 is thus rejected under 35 U.S.C. §102(e) as being anticipated by Ishimura.

With respect to dependent claim 19, Ishimura's dies CR1 are in the same shapes and sizes.

Claim 19 is thus rejected under 35 U.S.C. §102(e) as being anticipated by

Ishimura.

Claim 8 is rejected under 35 U.S.C. §103(a) as being unpatentable over Ishimura et al. (United States Patent 6,329,700 - hereafter Ishimura) together with Yung et al. (United States Patent 6,075,280 - hereafter Yung).

The difference between Ishimura's scribe lines (see the rejection of independent claim 1 above) and dependent claim 8's scribe lines is they are sawed and etched, respectively.

Yung teaches it is advantageous to etch scribe lines rather than saw them (see the entire patent).

It would have been obvious to one skilled in this art to advantageously etch Ishimura's scribe lines rather than saw them, as per Yung's teaching.

Claim 8 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Ishimura together with Yung.

Claim 5 is objected to as being dependent on a rejected base claim (i.e., claim 5 would be allowable over the prior art of record if amended to further include all the limitations of independent claim 1).

Claim 12 is objected to as being dependent on a rejected base claim (i.e., claim 12 would be allowable over the prior art of record if amended to further include all the limitations of independent claim 1).

Claim 13 is objected to as being dependent on a rejected base claim (i.e., claim 13 would be allowable over the prior art of record if amended to further include all the limitations of independent claim 1).

Claim 20 is objected to as being dependent on a rejected base claim (i.e., claim 20 would be allowable over the prior art of record if amended to further include all the

limitations of independent claim 1).

Claim 21 is objected to as being dependent on a rejected base claim (i.e., claim 21 would be allowable over the prior art of record if amended to further include all the limitations of independent claim 1).

Registered practitioners can telephone examiner Prenty at (703) 308-4939. Any voicemail message left for the examiner must include the name and registration number of the registered practitioner calling, and the application's Serial Number. Technology Center 2800's general telephone number is (703) 308-0956.

Mark Prenty
Mark V. Prenty
Primary Examiner